

IN THE OFFICE OF THE STATE ENGINEER  
OF THE STATE OF NEVADA

IN THE MATTER OF APPLICATIONS 64766 )  
AND 64767 FILED TO CHANGE THE POINT OF )  
DIVERSION, PLACE AND MANNER OF USE OF )  
WATERS PREVIOUSLY APPROPRIATED )  
FROM AN UNDERGROUND SOURCE WITHIN )  
AMARGOSA DESERT GROUNDWATER BASIN )  
(230), NYE COUNTY, NEVADA )

RULING

**# 4836**

GENERAL

I.

Application 64766 was filed on January 13, 1999, by Rockview Farms, Inc. to change the point of diversion, place and manner of use of 1.0 cubic foot per second, not to exceed 57.50 acre-feet annually, a portion of the water previously appropriated under Permit 40448.<sup>1</sup> Application 64766 proposes to change the manner of use from quasi-municipal purposes and domestic purposes within Sections 13, 24 and the NW $\frac{1}{4}$  of Section 25, T.15S., R.49E., M.D.B.&M. to commercial dairy purposes within the NE $\frac{1}{4}$  of Section 9, T.17S., R.49E., M.D.B.&M. The proposed point of diversion is described as being located within the NE $\frac{1}{4}$  NE $\frac{1}{4}$  of said Section 9 and the existing point of diversion is located within the NW $\frac{1}{4}$  NE $\frac{1}{4}$  of Section 24, T.15S., R.49E., M.D.B.&M. Under Item 15 the remarks section of the application the applicant indicates that the water is to be used for the watering of 2,500 cows, the cleaning of barns, cooling misters, and general dairy operation with the runoff water to be disposed of by sprinkling it on fields of alfalfa within the permit area.

II.

Application 64767 was filed on January 13, 1999, by Rockview Farms, Inc. to change the point of diversion, place and manner of use of 1.0 cubic foot per second, not to exceed 57.50 acre-feet annually, a portion of the water previously appropriated under Permit 40448.<sup>2</sup> Application 64767 proposes to change the manner of use from quasi-municipal purposes and domestic purposes within

<sup>1</sup> File No. 64766, official records in the office of the State Engineer.

<sup>2</sup> File No. 64767, official records in the office of the State Engineer.

Sections 18, 19 and the N½ of Section 30, T.15S., R.50E., M.D.B.&M. to commercial dairy purposes within the NW¼ NE¼, the NE¼ NE¼ and the SW¼ NE¼ of Section 10, T.17S., R.49E., M.D.B.&M. The proposed point of diversion is described as being located within the NW¼ NE¼ of said Section 10 and the existing point of diversion is located within the NW¼ NE¼ of Section 24, T.15S., R.49E., M.D.B.&M. Under Item 15 the remarks section of the application the applicant indicates that the water is to be used for the watering of 2,500 cows, the cleaning of barns, cooling misters, and general dairy operation with the runoff water to be disposed of by sprinkling it on fields of alfalfa within the permit area.

### III.

Applications 64766 and 64767 were protested by the United States Department of Interior, National Park Service ("NPS") on the grounds summarized as follows:

1. The public interest will not be served if the water and water-related resources in the Death Valley National Park, including Devil's Hole, are diminished or impaired as a result of the appropriation proposed by these applications.
2. The appropriation proposed by the applications will reduce or eliminate the flows from springs at Death Valley National Park which are discharge areas for a regional groundwater flow system, thus, impacting the National Park Service's senior appropriative and Federal reserved water rights, water resources and water-related attributes threatening to prove detrimental to the public interest.
3. The appropriation and diversion contemplated by these applications, in combination with existing appropriations, will cause the water level at Devil's Hole to fall thereby impairing the senior Federal reserved water right for Devil's Hole.
4. There is no water available for appropriation as existing appropriations exceed the perennial yield.

5. Since there is no evidence of the quantity of water used under the permit proposed to be changed, the National Park Service considers these new appropriations and maintains there is no water available for appropriation.

6. Applications 64766 and 64767 propose to move the points of diversion to points significantly closer to Devil's Hole which in conjunction with existing appropriations will cause the water level at Devil's Hole to decline impairing the senior Federal reserved water right for Devil's Hole.

7. The applications do not request the manner of use be changed to irrigation yet irrigation is proposed, therefore, the applications propose a use that is inconsistent with quasi-municipal and domestic purposes.

8. The State Engineer has previously denied applications to appropriate water in the Amargosa Desert Hydrographic Area for irrigation and on those grounds these applications should also be denied.

#### FINDINGS OF FACT

##### I.

The NPS alleges since there is no evidence of the quantity of water used under the permit proposed for change it considers these applications to be a new appropriation and maintains there is no water available for appropriation. Applications 64766 and 64767 are requests to change the point of diversion, place and manner of use of an existing, valid, permitted water right. Nevada Revised Statute § 533.325 provides that any person may change the point of diversion, place or manner of use of water already appropriated which is statutorily defined to include water for whose appropriation the State Engineer has issued a permit but which has not been applied to the intended use before an application to change the point of diversion, place or manner of use is made.<sup>3</sup> The State Engineer finds that whether or not water has actually

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<sup>3</sup> NRS § 533.324.

been placed to beneficial use under the existing permit before the change applications were filed is irrelevant and the NPS's contention is not based in law and lacks merit.

II.

The NPS alleges that since Applications 64766 and 64767 propose to move the points of diversion closer to Devil's Hole that in conjunction with existing water rights they will cause the water level at Devil's Hole to decline impairing its senior Federal reserved water rights. Using a standard Theis Non-Equilibrium equation to estimate the drawdown of the water level from the pumping of the proposed wells at 72.74 gallons per minute<sup>4</sup> for 24 hours per day, using conservative values of storativity (0.01) and transmissivity (5,000 square feet per day), the State Engineer finds that after continuous pumping for a period of 30 years the drawdown of the groundwater level at a distance between 7 to 10 miles from the proposed point of diversion would be zero. The State Engineer finds the quantity of water applied for under Applications 64766 and 64767 is small enough and the distance great enough that chances of interference with the protestant's water rights are nil.

III.

Applications 64766 and 64767 describe new points of diversion that are respectively located within Sections 9 and 10 of T.17S., R.49E., M.D.B.&M.<sup>1,2</sup> The Devil's Hole unit of Death Valley National Park is located within the SW $\frac{1}{4}$  SE $\frac{1}{4}$  of Section 36, T.17S., R.50E., M.D.B.&M. The State Engineer finds the easternmost point of diversion proposed under the subject applications is in excess of nine miles from Devil's Hole.<sup>5</sup>

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<sup>4</sup> 72.74 gallons per minute equates to approximately 115 acre-feet annually (57.5 x 2 = 115).

<sup>5</sup> U.S.G.S. 7.5 minute topographic map, 1987, Devil's Hole Nevada and Franklin Wells Quadrangles.

IV.

The NPS alleges that these appropriations will reduce or eliminate the flows from springs at Death Valley National Park ("DVNP") which are the discharge areas for a regional groundwater flow system and/or will reduce the water level at Devil's Hole thereby impacting the NPS's senior appropriative and Federal reserved water rights, water resources and water-related attributes threatening to prove detrimental to the public interest.

The State Engineer has held multiple hearings and has repeatedly heard testimony and evidence as to the various regional groundwater flow systems which may contribute to the water level in the pool at Devil's Hole and to discharge at springs in the DVNP.<sup>6</sup> Records of the office of the State Engineer describe three regional interbasin groundwater flow subsystems which contribute to a larger regional flow system known as the Death Valley Groundwater Flow System covering approximately 15,800 square miles.<sup>7</sup> The three regional interbasin groundwater flow subsystems are known as the Ash Meadows Subsystem in the eastern portion, the Pahute Mesa Subsystem (aka the Alkali-Flat Furnace Creek Ranch Subsystem) in the central portion, and the Sarcobatus Flat Subsystem in the western portion of the region.<sup>8</sup> To date no one has been able to specifically define the boundaries of the overall area of the Death

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<sup>6</sup> Transcript, pp. 84-192; Exhibit No. P11, p. 2, 6, In the Matter of Applications 60985 through 60992 filed by Rayrock Mines, Inc. to appropriate the public waters from an underground source within Crater Flat Groundwater Basin (229), Nye County, Nevada. See also, evidence and testimony presented by the United States Department of Energy - Yucca Mountain Site Characterization Project Office In the Matter of Applications 63263, 63264, 63265, 63266 and 63267 filed to appropriate the public waters from an underground source within the Fortymile Canyon - Jackass Flat Groundwater Basin (227a), Nye County, Nevada, in particular Exhibit No. 54. Official records in the office of the State Engineer.

<sup>7</sup> Rush, F. Eugene, Water Resources - Reconnaissance Series Report 54, Regional Groundwater Systems in the Nevada Test Site Area, Nye, Lincoln, and Clark Counties, Nevada (1970), p. 1.

<sup>8</sup> Rush, F. Eugene, Water Resources - Reconnaissance Series Report 54, Regional Groundwater Systems in the Nevada Test Site Area, Nye, Lincoln, and Clark Counties, Nevada (1970), p. 1.

Valley Groundwater Flow System; thus, regional scale uncertainties exist as to the boundaries of the overall flow system.<sup>9</sup> Over 15 conceptual models have been created relating to the Death Valley Groundwater Flow System<sup>10</sup>, and major uncertainties remain regarding the eastern and northern boundaries of the flow system.<sup>11</sup> After years of intensive study in parts of the system, the hydrology of the entire Death Valley Groundwater Flow System still is not completely understood.

Records in the office of the State Engineer indicate that since 1988 the water level has gradually declined in the Devil's Hole pool;<sup>12</sup> however, the cause has not yet been isolated.<sup>13</sup> The manner in which Devil's Hole pool is hydraulically linked to the regional aquifer is complex and not well understood.<sup>14</sup> Factors that have been evaluated with regard to the gradual decline in the water-level elevation at Devil's Hole have included short-term

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<sup>9</sup> Transcript, pp. 87-92; Hearing Exhibit No. P11, pp. 1-12, 55, In the Matter of Applications 60985 through 60992 filed by Rayrock Mines, Inc. to appropriate the public waters from an underground source within Crater Flat Groundwater Basin (229), Nye County, Nevada. Official records in the office of the State Engineer.

<sup>10</sup> Exhibit No. P11, p. 8, In the Matter of Applications 60985 through 60992 filed by Rayrock Mines, Inc. to appropriate the public waters from an underground source within Crater Flat Groundwater Basin (229), Nye County, Nevada. Official records in the office of the State Engineer.

<sup>11</sup> Transcript, p. 89, In the Matter of Applications 60985 through 60992 filed by Rayrock Mines, Inc. to appropriate the public waters from an underground source within Crater Flat Groundwater Basin (229), Nye County, Nevada. Official records in the office of the State Engineer.

<sup>12</sup> Exhibit No. P2; Transcript, pp. 195-199, In the Matter of Applications 60985 through 60992 filed by Rayrock Mines, Inc. to appropriate the public waters from an underground source within Crater Flat Groundwater Basin (229), Nye County, Nevada. Official records in the office of the State Engineer.

<sup>13</sup> Exhibit No. P11, p. 46, In the Matter of Applications 60985 through 60992 filed by Rayrock Mines, Inc. to appropriate the public waters from an underground source within Crater Flat Groundwater Basin (229), Nye County, Nevada. Official records in the office of the State Engineer.

<sup>14</sup> Exhibit No. P11, p. 70, In the Matter of Applications 60985 through 60992 filed by Rayrock Mines, Inc. to appropriate the public waters from an underground source within Crater Flat Groundwater Basin (229), Nye County, Nevada. Official records in the office of the State Engineer.

climatic fluctuations,<sup>15</sup> changes in pumping rates from selected wells, and seismic activity that occurred at about the time water levels began to decline.<sup>16</sup>

Three types of groundwater reservoirs are identified within the regional groundwater subsystems: valley-fill (alluvium), volcanic-rock and carbonate-rock aquifers.<sup>17</sup> Alluvium underlies the valley floors and is commonly saturated only at great depth. Some water in the valley-fill leaks downward to the underlying volcanic or carbonate rock.<sup>18</sup> In the topographically closed hydrographic areas ground water flows through the valley fill and moves laterally or vertically downward to the volcanic-rock or carbonate-rock aquifers.<sup>19</sup>

The consolidated rocks of the area are comprised of mostly volcanic rocks; however, some extensive areas of carbonate rocks are known to exist.<sup>20</sup> The volcanic-rock aquifers locally transmit water through fractures to the underlying carbonate-rock aquifers; however, where the carbonate rocks are absent, the fractured

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<sup>15</sup> In the Matter of Applications 60985 through 60992 filed by Rayrock Mines, Inc. to appropriate the public waters from an underground source within Crater Flat Groundwater Basin (229), Nye County, Nevada. Protestant provided testimony which indicates that a long-term natural drying of the area is occurring. Transcript, pp. 21, 28-29. Official records in the office of the State Engineer.

<sup>16</sup> Exhibit No. P11, p. 46, In the Matter of Applications 60985 through 60992 filed by Rayrock Mines, Inc. to appropriate the public waters from an underground source within Crater Flat Groundwater Basin (229), Nye County, Nevada. Official records in the office of the State Engineer.

<sup>17</sup> Rush, F. Eugene, Water Resources - Reconnaissance Series Report 54, Regional Groundwater Systems in the Nevada Test Site Area, Nye, Lincoln, and Clark Counties, Nevada (1970), note 20, at 1.

<sup>18</sup> Rush, Id. note 20, at 1, 8.

<sup>19</sup> Rush, Id. note 20, at 8.

<sup>20</sup> Rush, Id. note 20, at 1.

volcanic-rock aquifers transmit ground water beneath topographic divides.<sup>21</sup>

Several thousand feet of saturated carbonate-rock aquifers are believed to lie under some of the region, and carbonate-rock aquifers also may transmit a regional flow of water.<sup>22</sup> The regional distribution of carbonate rocks has hydrologic significance because they transmit a flow of ground water in regional groundwater systems beneath topographic divides.<sup>23</sup> There may be different flow directions between the shallow and deep aquifer systems<sup>24</sup>, and it is recognized there may be more than one way that water gets into Death Valley.<sup>25</sup> While there may be some leakage between the deep and shallow aquifers,<sup>26</sup> the State Engineer finds there is a lack of testimony and evidence on the magnitude of any mixing or leakage, if any, between the Crater Flat Groundwater Basin and the regional carbonate aquifer.

The State Engineer finds that substantial uncertainties remain as to the specific boundaries of the regional groundwater flow system and subsystems which contribute to regional groundwater flow that may contribute to the discharge from the system at Devil's Hole or springs within the DVNP. The State Engineer finds these

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<sup>21</sup> Rush, Id. note 20, at 8.

<sup>22</sup> Rush, Id. note 20, at 1, 8.

<sup>23</sup> Rush, Id. note 20, at 7.

<sup>24</sup> Transcript, p. 114, In the Matter of Applications 60985 through 60992 filed by Rayrock Mines, Inc. to appropriate the public waters from an underground source within Crater Flat Groundwater Basin (229), Nye County, Nevada. Official records in the office of the State Engineer.

<sup>25</sup> Transcript, p. 117, In the Matter of Applications 60985 through 60992 filed by Rayrock Mines, Inc. to appropriate the public waters from an underground source within Crater Flat Groundwater Basin (229), Nye County, Nevada. Official records in the office of the State Engineer.

<sup>26</sup> Transcript, pp. 115-116, In the Matter of Applications 60985 through 60992 filed by Rayrock Mines, Inc. to appropriate the public waters from an underground source within Crater Flat Groundwater Basin (229), Nye County, Nevada. Official records in the office of the State Engineer.



applications request to change the point of diversion, place and manner of use of water already appropriated within the same hydrographic basin and there is no evidence that these appropriations will take water from the carbonate regional groundwater flow system any differently than they would have under the original permit being sought to be changed. The State Engineer finds the granting of these change applications will not reduce or eliminate the flows from springs at Death Valley National Park or impact any water rights claimed by the NPS or diminish or impair the water level at Devil's Hole any differently than the use proposed under the base water right permit which is being sought to change.

V.

The NPS alleges that the applications do not request the manner of use be changed to irrigation yet irrigation using the waste water from the commercial dairy is proposed in the remarks section of the applications and this use is inconsistent with quasi-municipal and domestic use. Nevada Revised Statute § 533.330 provides that no application shall be for water from more than one source to be used for more than one purpose. Applications 64766 and 64767 were filed for the primary purpose of a commercial dairy and any irrigation with waste water contemplated would be a secondary purpose. The State Engineer finds if the applicant wishes to use the waste water for the irrigation purposes stated in the remarks section of the application it must file another application citing to the waste water of these permits as the source of the water and irrigation as the manner of use; therefore, no use for irrigation will be granted under these applications.

CONCLUSIONS OF LAW

I.

The State Engineer has jurisdiction over the subject matter of this action and determination.<sup>27</sup>

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<sup>27</sup> NRS Chapters 533 and 534.

II.

The State Engineer is prohibited by law from granting a permit under an application to change the public waters where<sup>28</sup>:

- a. the proposed use conflicts with existing rights; or
- b. the proposed use threatens to prove detrimental to the public interest.

III.

The State Engineer concludes that the NPS's contention that there is no water available for appropriation lacks merit and is in direct contradiction to the provisions of Nevada Water Law that provide for the ability to change the point of diversion, place or manner of use of water already appropriated.

IV.

The State Engineer concludes the granting of change applications on water already appropriated from this source will not conflict with any existing water rights of the NPS nor threaten to prove detrimental to the public interest as these applications seek to change water already appropriated and no impact was shown on the drawdown analysis.

V.

The State Engineer concludes the requested use for irrigation is not within the one purpose allowed by statute in any individual water right application; therefore, no use for irrigation will be granted under these applications.

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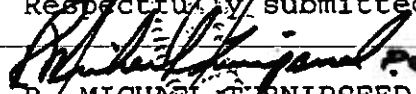
<sup>28</sup> NRS Chapter 533.370(3).

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**RULING**

The protests to Applications 64766 and 64767 are hereby overruled and Applications 64766 and 64767 are granted subject to existing rights and the payment of statutory permit fees.

Respectfully submitted,

  
R. MICHAEL TURNIPSEED, P.E.  
State Engineer

RMT/SJT/cl

Dated this 11th day of  
January, 2000.